MORE® CHANCE 茂昌电子

CUSTOMER :	STD
PRODUCTS :	Multilayer Ferrite Chip Inductor
PART NO :	MCCI Series
CUST P/ NO :	
DATE :	2025.04.16
SALES DEP :	
E-MAIL :	

VERSION :	REV.A
CHANGE PROJECT :	-
BEFORE :	-
AFTER :	-
CHANGE DATE :	-
CUSTOMER SIGNATURE :	-

APPROVAL BY :	*CHECK BY :*	*DRAWN BY :*
Honey Wei	***Leo Wang***	***Lan***

CHANGE HISTORY

Ver	Revision Items	Before Revision	After Revision	Date
Rev.A	-	-	-	2025.04.16

MCCI Series

- *Chip Hight Frequency Inductors*
- *Operating Temperature up tp -40 ℃ ~ 85 ℃*
- *High Current up to 1600mA*
- *Environmental Lead free*
- *Environmental RoHS2.0 compliant*
- *Environmental halogen free*
- *Storage Temperature ：-40 ˚C to +85 ˚C.*
- *Packaging 7"Reel, Plastic tape: 8/12 mm wide*

FEATURES

- Monolithic structure.
- Closed magnetic circuit avoids crosstalk.
- Suitable for flow and reflow soldering.
- Shapes and dimensions follow E.I.A. SPEC.
- Excellent soldering ability and heat resistance.
- HighHigh reliability.

Applications

- Noise elimination for four I/O lines of notebook PCs.
- digital TVs and VTRs,printers,hard disk drives.
- personal computers and other general consumer and computers products.

PRODUCT IDENTIFICATION

MC	CI	1005	Z	4R7	M	□□
①	②	③	④	⑤	⑥	⑦

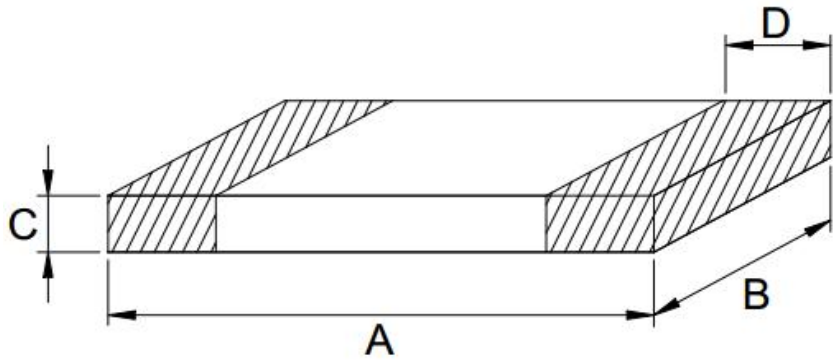
① Brand & Product classification
② Product Series NO.(CI：Chip Inductors)
③ External Dimensions.(1005 ：L:1.0 × W:0.5 × H:0.5) [mm]
④ Separator code.
⑤ Nominal Inductance

Example	Nominal Value
1R0	1.0 μH
2R2	2.2 μH
3R3	3.3 μH
4R7	4.7μH

⑥ Inductance Tolerance.(B : ±0.1nH, S : ±0.3nH, D:±0.5nH，J: ±5% , K:±10%,M:±20%)
⑦ Material Code.(H：H Type material.HH: HH Type material)

Mechanical & Dimensions

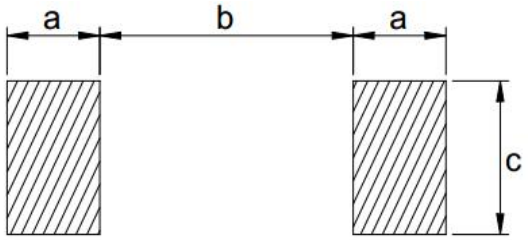
(Unit: mm)



Code	Dimensions
A	1.00 ±0.15
B	0.50 ±0.15
C	0.50 ±0.15
D	0.25 ±0.1

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	0.55 Ref
b	0.40 Ref
c	0.55 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.	Test Frequency L,Q (MHz)	Q Min
MCCI1005Z47NK	0.047	0.45	25	220	50	10
MCCI1005Z56NK	0.056	0.45	25	210	50	10
MCCI1005Z68NK	0.068	0.45	25	210	50	10
MCCI1005Z82NK	0.082	0.45	25	200	50	10
MCCI1005ZR10K	0.10	0.70	25	200	25	15
MCCI1005ZR12K	0.12	0.70	25	165	25	15
MCCI1005ZR15K	0.15	0.80	25	140	25	15
MCCI1005ZR18K	0.18	0.80	25	120	25	15
MCCI1005ZR22K	0.22	1.00	25	110	25	15
MCCI1005ZR27K	0.27	1.20	25	95	25	15
MCCI1005ZR33K	0.33	1.20	25	85	25	15
MCCI1005ZR39K	0.39	1.30	20	70	10	15
MCCI1005ZR47K	0.47	1.50	20	68	10	15
MCCI1005ZR56K	0.56	2.00	20	55	10	15
MCCI1005ZR68K	0.68	2.30	20	50	10	15
MCCI1005ZR82K	0.82	3.00	18	45	10	15
MCCI1005Z1R0K	1.0	1.00	15	40	10	20
MCCI1005Z1R2K	1.2	1.20	25	35	10	20

Note:

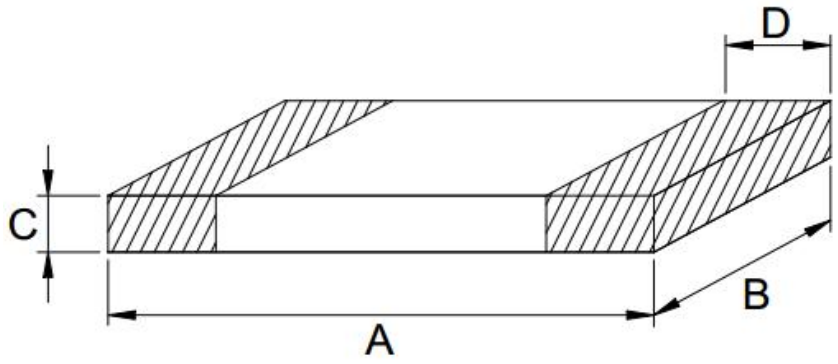
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

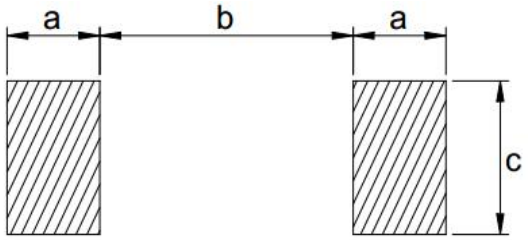
(Unit: mm)



Code	Dimensions
A	1.60 ±0.2
B	0.80 ±0.2
C	0.80 ±0.2
D	0.30 ±0.2

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.0 Ref
b	0.6 Ref
c	0.8 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.	Test Frequency L,Q (MHz)	Q Min
MCCI1608Z47NK	0.047	0.20	50	260	50	15
MCCI1608Z56NK	0.056	0.20	50	260	50	15
MCCI1608Z68NK	0.068	0.20	50	250	50	15
MCCI1608Z82NK	0.082	0.20	50	245	50	15
MCCI1608ZR10K	0.10	0.25	50	240	25	20
MCCI1608ZR12K	0.12	0.30	50	205	25	20
MCCI1608ZR15K	0.15	0.30	50	180	25	20
MCCI1608ZR18K	0.18	0.30	50	165	25	20
MCCI1608ZR22K	0.22	0.40	50	150	25	20
MCCI1608ZR27K	0.27	0.45	50	136	25	20
MCCI1608ZR33K	0.33	0.50	50	125	25	20
MCCI1608ZR39K	0.39	0.60	50	110	25	20
MCCI1608ZR47K	0.47	0.70	50	105	25	20
MCCI1608ZR56K	0.56	0.70	50	95	25	20
MCCI1608ZR68K	0.68	0.90	50	90	25	20
MCCI1608ZR82K	0.82	1.00	50	85	25	20

Note:

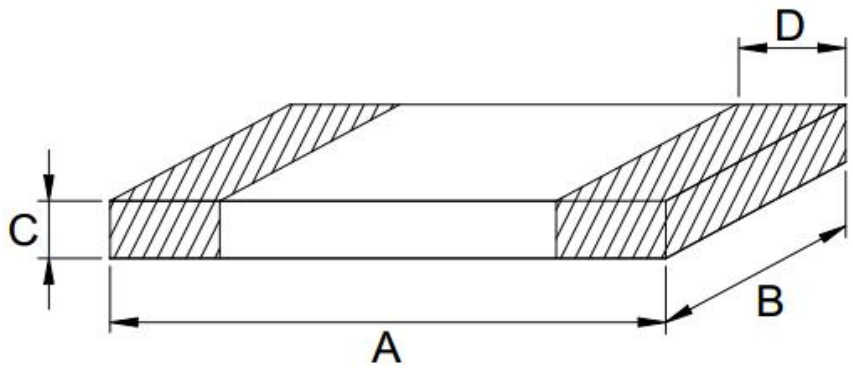
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

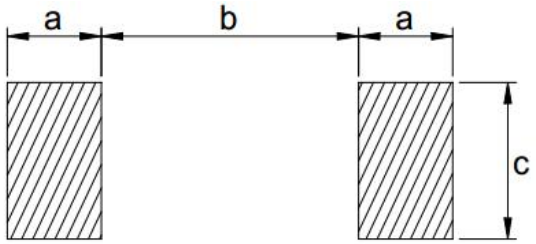
(Unit: mm)



Code	Dimensions
A	1.60 ±0.2
B	0.80 ±0.2
C	0.80 ±0.2
D	0.30 ±0.2

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.0 Ref
b	0.6 Ref
c	0.8 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.	Test Frequency L,Q (MHz)	Q Min
MCCI1608Z1R0K	1.0	0.50	25	75	10	25
MCCI1608Z1R2K	1.2	0.55	25	65	10	25
MCCI1608Z1R5K	1.5	0.70	25	60	10	25
MCCI1608Z1R8K	1.8	0.75	25	55	10	25
MCCI1608Z2R2K	2.2	0.80	25	50	10	25
MCCI1608Z2R7K	2.7	0.90	15	45	10	25
MCCI1608Z3R3K	3.3	1.00	15	40	10	25
MCCI1608Z3R9K	3.9	1.30	15	35	10	25
MCCI1608Z4R7K	4.7	1.50	15	33	10	25
MCCI1608Z5R6K	5.6	1.55	5	22	4	12
MCCI1608Z6R8K	6.8	1.55	5	20	4	12
MCCI1608Z8R2K	8.2	1.65	5	18	4	12
MCCI1608Z100K	10.0	1.75	3	17	2	20
MCCI1608Z120K	12.0	1.85	3	15	2	20
MCCI1608Z150M	15.0	2.50	1	14	1	20
MCCI1608Z180M	18.0	2.70	1	13	1	20
MCCI1608Z220M	22.0	3.00	1	12	1	20

Note:

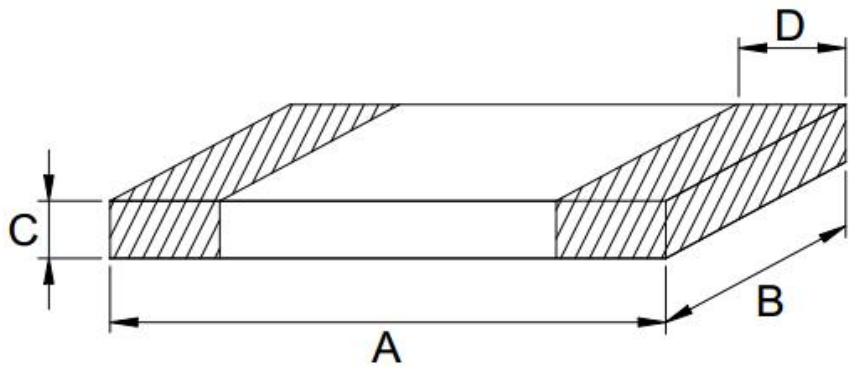
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

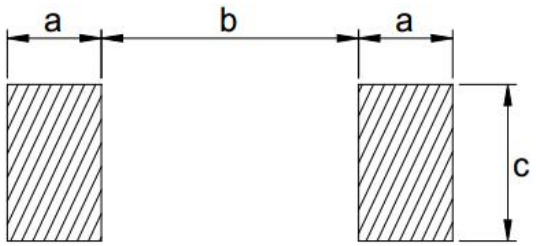
(Unit: mm)



Code	Dimensions
A	2.0 ±0.2
B	1.2 ±0.2
C	0.9 ±0.2
D	0.5 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.0 Ref
b	1.0 Ref
c	1.0 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.		
MCCI2012Z47NM	0.047	0.15	350	320		
MCCI2012Z56NM	0.056	0.15	350	320		
MCCI2012Z68NM	0.068	0.20	350	280		
MCCI2012Z82NM	0.082	0.20	350	280		
MCCI2012ZR10M	0.10	0.20	350	235		
MCCI2012ZR12M	0.12	0.20	350	220		
MCCI2012ZR15M	0.15	0.20	350	200		
MCCI2012ZR18M	0.18	0.25	300	185		
MCCI2012ZR22M	0.22	0.25	300	170		
MCCI2012ZR27M	0.27	0.25	300	150		
MCCI2012ZR33M	0.33	0.25	300	145		
MCCI2012ZR39M	0.39	0.30	250	135		
MCCI2012ZR47M	0.47	0.30	250	125		
MCCI2012ZR56M	0.56	0.36	200	115		
MCCI2012ZR68M	0.68	0.36	200	105		
MCCI2012ZR82M	0.82	0.36	200	100		

Note:

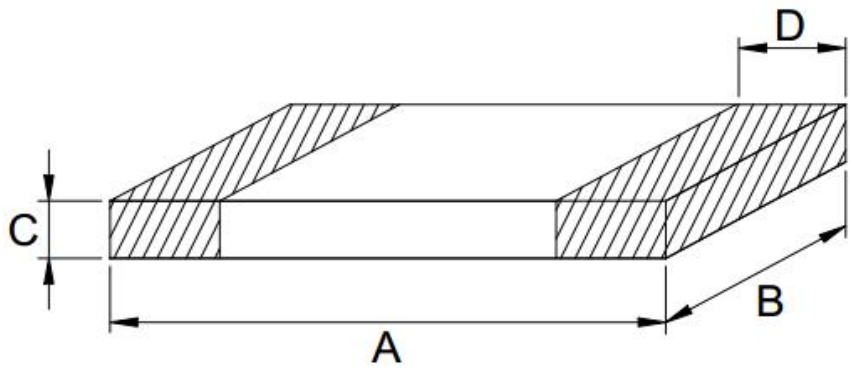
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

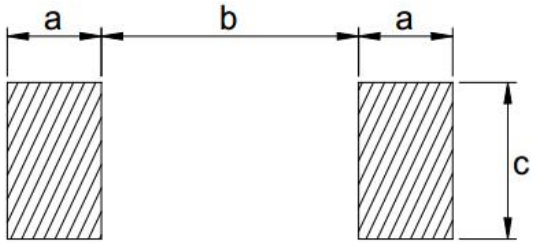
(Unit: mm)



Code	Dimensions
A	2.0 ±0.2
B	1.2 ±0.2
C	0.9 ±0.2
D	0.5 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.0 Ref
b	1.0 Ref
c	1.0 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.		
MCCI2012Z1R0M	1.0	0.26	220	75		
MCCI2012Z1R2M	1.2	0.26	220	65		
MCCI2012Z1R5M	1.5	0.30	180	60		
MCCI2012Z1R8M	1.8	0.30	180	55		
MCCI2012Z2R2M	2.2	0.36	150	50		
MCCI2012Z2R7M	2.7	0.36	150	45		
MCCI2012Z3R3M	3.3	0.40	120	41		
MCCI2012Z3R9M	3.9	0.40	120	38		
MCCI2012Z4R7M	4.7	0.40	120	35		
MCCI2012Z5R6M	5.6	0.60	100	32		
MCCI2012Z6R8M	6.8	0.60	100	29		
MCCI2012Z8R2M	8.2	0.65	100	26		
MCCI2012Z100M	10.0	0.65	100	24		
MCCI2012Z120M	12.0	0.65	100	22		
MCCI2012Z150M	15.0	0.75	50	19		
MCCI2012Z180M	18.0	0.75	50	18		
MCCI2012Z220M	22.0	0.75	50	16		

Note:

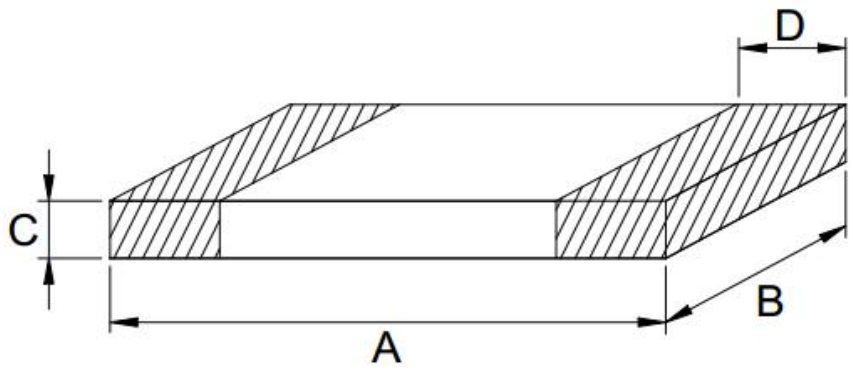
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

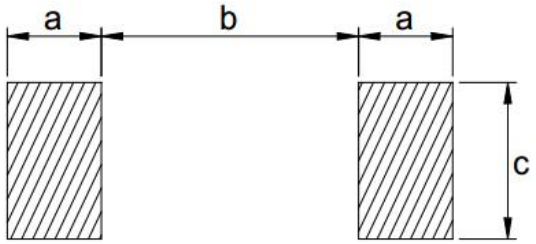
(Unit: mm)



Code	Dimensions
A	3.20 ±0.2
B	1.60 ±0.2
C	0.90 ±0.2
D	0.50 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.1 Ref
b	2.2 Ref
c	1.4 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.	Test Frequency L,Q (MHz)	Q Min
MCCI3216Z47NK	0.047	0.15	300	320	50	30
MCCI3216Z56NK	0.056	0.20	300	320	50	30
MCCI3216Z68NK	0.068	0.25	300	280	50	30
MCCI3216Z82NK	0.082	0.25	300	280	50	30
MCCI3216ZR10K	0.10	0.25	250	235	25	25
MCCI3216ZR12K	0.12	0.25	250	220	25	25
MCCI3216ZR15K	0.15	0.25	250	200	25	25
MCCI3216ZR18K	0.18	0.30	250	185	25	25
MCCI3216ZR22K	0.22	0.30	250	170	25	25
MCCI3216ZR27K	0.27	0.30	250	150	25	25
MCCI3216ZR33K	0.33	0.30	250	145	25	25
MCCI3216ZR39K	0.39	0.50	200	135	25	30
MCCI3216ZR47K	0.47	0.50	200	125	25	30
MCCI3216ZR56K	0.56	0.50	150	115	25	30
MCCI3216ZR68K	0.68	0.50	150	105	25	30
MCCI3216ZR82K	0.82	0.60	150	100	25	30
MCCI3216Z1R0K	1.0	0.30	100	75	10	35
MCCI3216Z1R2K	1.2	0.40	100	65	10	35

Note:

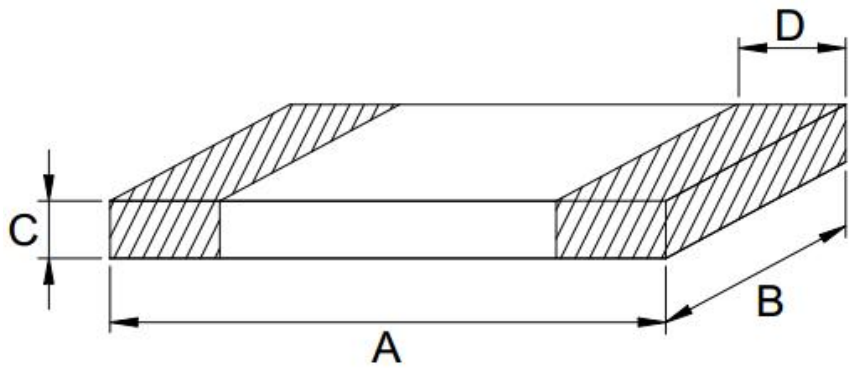
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

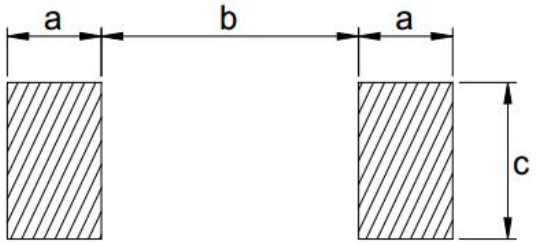
(Unit: mm)



Code	Dimensions
A	3.20 ±0.2
B	1.60 ±0.2
C	0.90 ±0.2
D	0.50 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.1 Ref
b	2.2 Ref
c	1.4 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.	Test Frequency L,Q (MHz)	Q Min
MCCI3216Z1R5K	1.5	0.40	50	60	10	35
MCCI3216Z1R8K	1.8	0.40	50	55	10	35
MCCI3216Z2R2K	2.2	0.50	50	50	10	35
MCCI3216Z2R7K	2.7	0.50	50	45	10	35
MCCI3216Z3R3K	3.3	0.50	50	41	10	35
MCCI3216Z3R9K	3.9	0.60	50	38	10	35
MCCI3216Z4R7K	4.7	0.65	25	35	10	35
MCCI3216Z5R6K	5.6	0.80	25	32	4	35
MCCI3216Z6R8K	6.8	0.80	25	29	4	35
MCCI3216Z8R2K	8.2	0.80	25	26	4	35
MCCI3216Z100K	10.0	0.80	25	24	2	35
MCCI3216Z120K	12.0	0.90	15	22	2	35
MCCI3216Z150K	15.0	1.00	5	19	1	30
MCCI3216Z180K	18.0	1.00	5	18	1	30
MCCI3216Z220K	22.0	1.20	5	16	1	30
MCCI3216Z270K	27.0	1.20	5	14	1	30
MCCI3216Z330K	33.0	1.30	5	13	1	30
MCCI3216Z390K	39.0	1.30	5	13	1	30

Note:

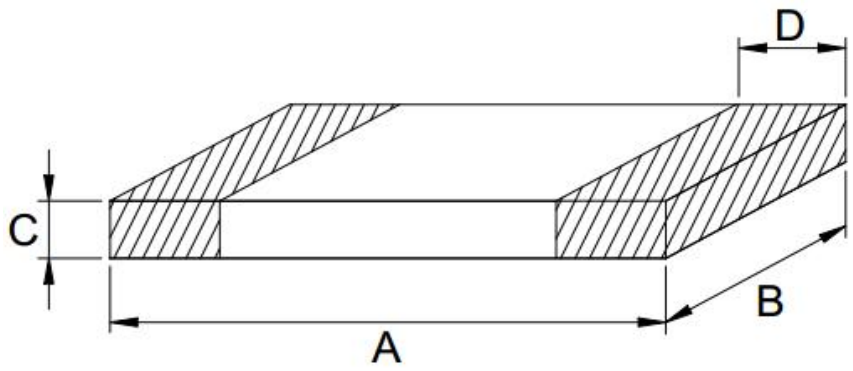
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

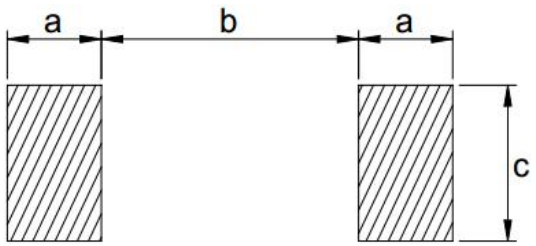
(Unit: mm)



Code	Dimensions
A	3.20 ±0.2
B	1.60 ±0.2
C	1.10 ±0.2
D	0.50 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.1 Ref
b	2.2 Ref
c	1.4 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.	Test Frequency L,Q (MHz)	Q Min
MCCI321611Z470K	47.0	1.60	5	12	1	30
MCCI321611Z560M	56.0	1.80	5	12	1	30
MCCI321611Z680M	68.0	2.00	5	11	1	30
MCCI321611Z820M	82.0	2.40	5	11	1	30
MCCI321611Z101M	100.0	3.00	5	8	1	30

Note:

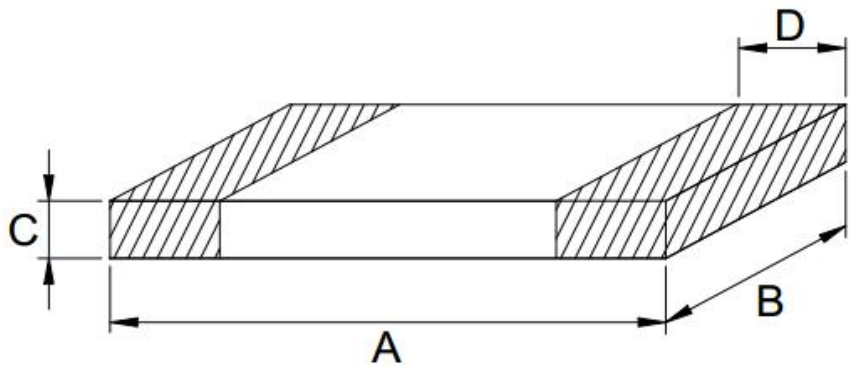
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

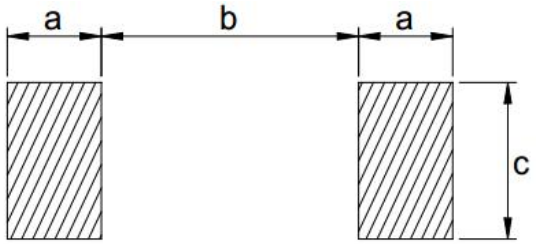
(Unit: mm)



Code	Dimensions
A	3.20 ±0.2
B	2.50 ±0.2
C	1.30 ±0.2
D	0.50 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.1 Ref
b	2.2 Ref
c	3.4 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.	Test Frequency L,Q (MHz)	Q Min
MCCI3225Z1R0K	1.0	0.20	600	70	10	40
MCCI3225Z1R2K	1.2	0.20	600	70	10	40
MCCI3225Z1R5K	1.5	0.30	500	70	10	40
MCCI3225Z1R8K	1.8	0.30	500	70	10	40
MCCI3225Z2R2K	2.2	0.30	500	50	10	40
MCCI3225Z2R7K	2.7	0.30	500	50	10	40
MCCI3225Z3R3K	3.3	0.40	500	50	10	40
MCCI3225Z3R9K	3.9	0.40	500	30	10	40
MCCI3225Z4R7K	4.7	0.50	500	30	10	40
MCCI3225Z5R6K	5.6	0.60	450	30	4	35
MCCI3225Z6R8K	6.8	0.60	450	20	4	35
MCCI3225Z8R2K	8.2	0.70	400	20	4	35
MCCI3225Z100K	10.0	0.70	400	20	2	35
MCCI3225Z120K	12.0	0.70	400	20	2	35
MCCI3225Z150K	15.0	0.70	300	10	1	35
MCCI3225Z180K	18.0	0.70	300	10	1	35

Note:

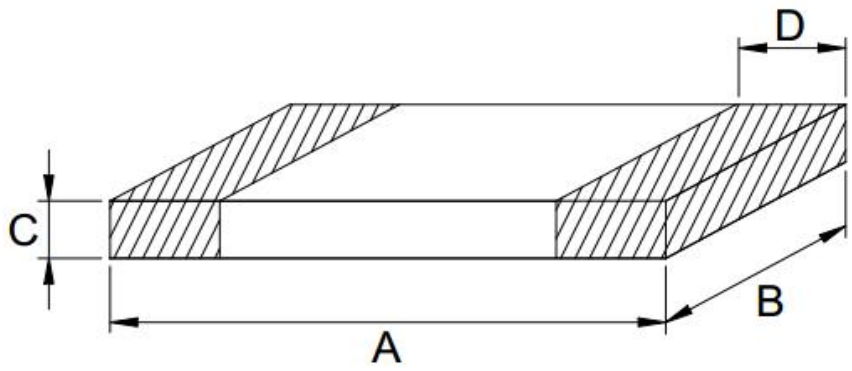
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

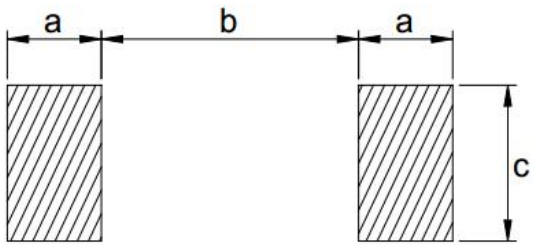
(Unit: mm)



Code	Dimensions
A	3.20 ±0.2
B	2.50 ±0.2
C	1.30 ±0.2
D	0.50 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.1 Ref
b	2.2 Ref
c	3.4 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.	Test Frequency L,Q (MHz)	Q Min
MCCI3225Z220K	22.0	0.75	250	10	1	35
MCCI3225Z270K	27.0	0.75	250	10	1	35
MCCI3225Z330K	33.0	0.80	250	10	1	35
MCCI3225Z390K	39.0	0.80	250	10	1	35
MCCI3225Z470K	47.0	1.00	200	10	1	35
MCCI3225Z560M	56.0	1.20	200	5	1	35
MCCI3225Z680M	68.0	1.30	150	5	1	35
MCCI3225Z820M	82.0	1.50	150	5	1	35
MCCI3225Z101M	100.0	1.50	150	5	1	35
MCCI3225Z121M	120.0	1.80	150	5	1	35

Note:

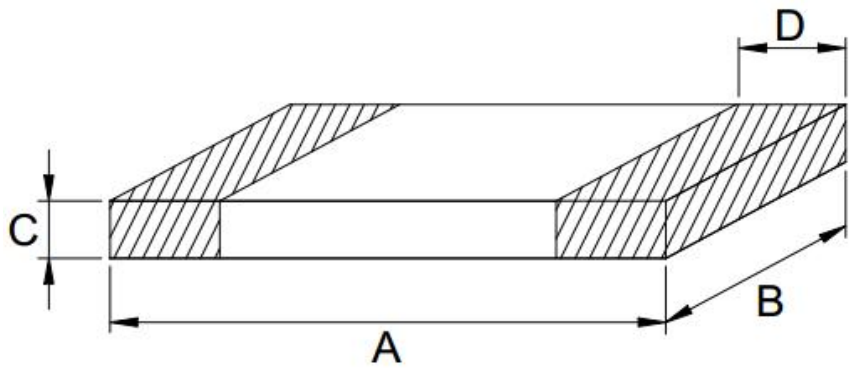
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

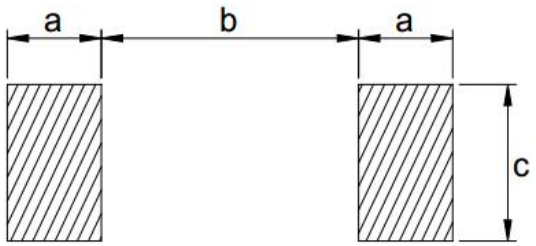
(Unit: mm)



Code	Dimensions
A	4.50 ±0.2
B	3.20 ±0.2
C	1.50 ±0.2
D	0.50 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	0.84 Ref
b	2.57 Ref
c	4.22 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.	Test Frequency L,Q (MHz)	Q Min
MCCI4532Z1R0K	1.0	0.55	650	50	10	35
MCCI4532Z1R2K	1.2	0.55	650	50	10	35
MCCI4532Z1R5K	1.5	0.55	600	45	10	35
MCCI4532Z1R8K	1.8	0.65	600	45	10	35
MCCI4532Z2R2K	2.2	0.65	500	40	10	35
MCCI4532Z2R7K	2.7	0.70	500	40	10	35
MCCI4532Z3R3K	3.3	0.75	500	35	10	35
MCCI4532Z3R9K	3.9	0.80	500	35	10	35
MCCI4532Z4R7K	4.7	0.90	500	25	10	30
MCCI4532Z5R6K	5.6	0.90	500	20	4	30
MCCI4532Z6R8K	6.8	1.00	500	18	4	30
MCCI4532Z8R2K	8.2	1.00	450	17	4	30
MCCI4532Z100K	10.0	1.00	450	16	2	30
MCCI4532Z120K	12.0	1.00	450	15	2	35
MCCI4532Z150K	15.0	1.00	400	14	1	35
MCCI4532Z180K	18.0	1.00	400	13	1	35

Note:

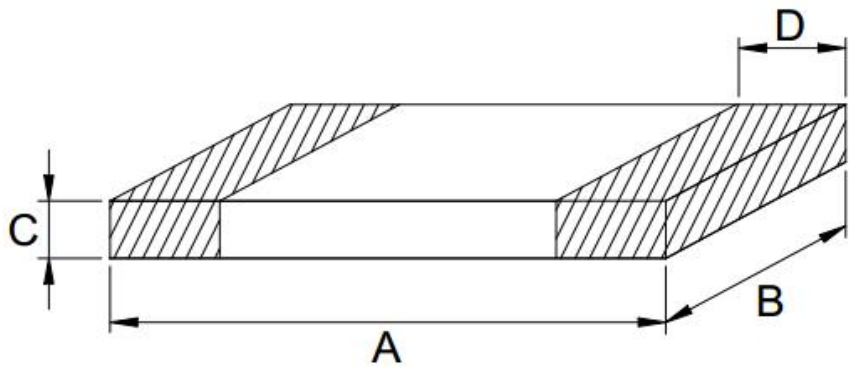
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

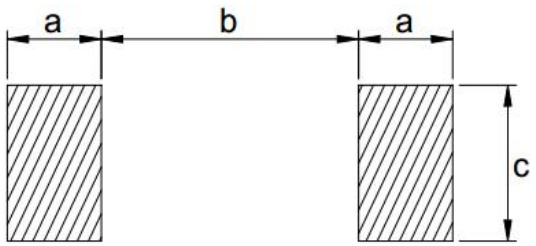
(Unit: mm)



Code	Dimensions
A	4.50 ±0.2
B	3.20 ±0.2
C	1.50 ±0.2
D	0.50 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	0.84 Ref
b	2.57 Ref
c	4.22 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF(MHz) Min.	Test Frequency L,Q (MHz)	Q Min
MCCI4532Z220K	22.0	1.30	300	12	1	35
MCCI4532Z270K	27.0	1.30	300	10	1	35
MCCI4532Z330K	33.0	1.50	250	10	1	40
MCCI4532Z390K	39.0	1.50	250	10	1	40
MCCI4532Z470K	47.0	1.65	250	8	1	40
MCCI4532Z560K	56.0	1.80	250	8	1	40
MCCI4532Z680M	68.0	2.00	200	6	1	40
MCCI4532Z820M	82.0	2.30	200	6	1	40
MCCI4532Z101M	100.0	2.30	150	6	1	40
MCCI4532Z102M	120.0	2.50	150	6	1	40

Note:

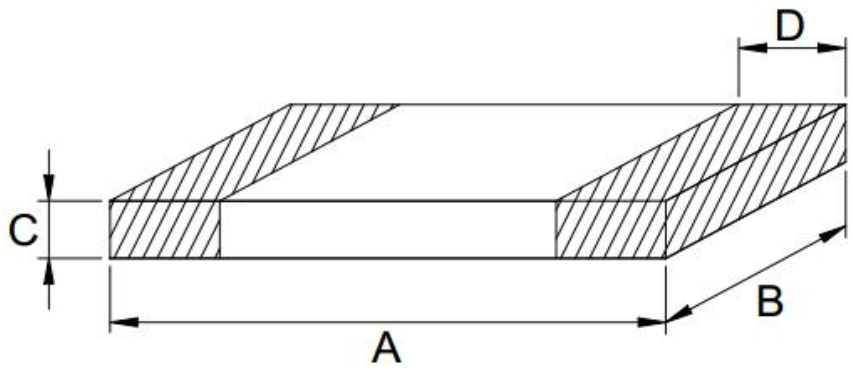
1 Inductance is measured at 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

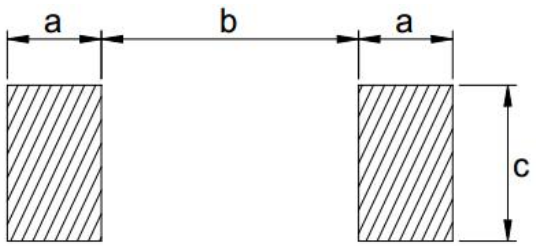
(Unit: mm)



Code	Dimensions
A	1.60 ±0.2
B	0.80 ±0.2
C	0.80 ±0.2
D	0.30 ±0.2

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.0 Ref
b	0.6 Ref
c	0.8 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF (MHz) min.	
MCCI1608Z47NMH	0.047	0.12	150	260	
MCCI1608Z56NMH	0.056	0.12	150	260	
MCCI1608Z68NMH	0.068	0.12	150	250	
MCCI1608Z82NMH	0.082	0.12	150	245	
MCCI1608ZR10MH	0.10	0.15	150	240	
MCCI1608ZR12MH	0.12	0.20	150	205	
MCCI1608ZR15MH	0.15	0.20	150	180	
MCCI1608ZR18MH	0.18	0.20	150	165	
MCCI1608ZR22MH	0.22	0.25	150	150	
MCCI1608ZR27MH	0.27	0.30	100	136	
MCCI1608ZR33MH	0.33	0.30	100	125	
MCCI1608ZR39MH	0.39	0.35	100	110	
MCCI1608ZR47MH	0.47	0.45	100	105	
MCCI1608ZR56MH	0.56	0.45	100	95	
MCCI1608ZR68MH	0.68	0.55	100	90	
MCCI1608ZR82MH	0.82	0.60	100	85	

Note:

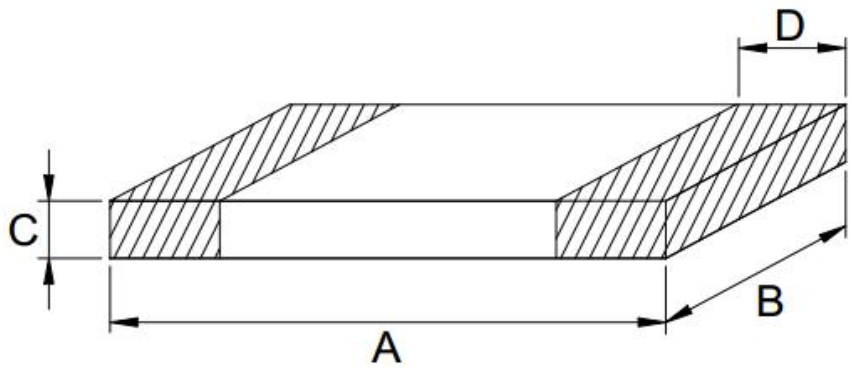
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

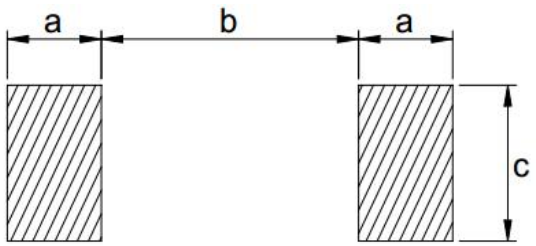
(Unit: mm)



Code	Dimensions
A	1.60 ±0.2
B	0.80 ±0.2
C	0.80 ±0.2
D	0.30 ±0.2

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.0 Ref
b	0.6 Ref
c	0.8 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF (MHz) min.	
MCCI1608Z1R0MH	1.0	0.30	150	75	
MCCI1608Z1R2MH	1.2	0.30	150	65	
MCCI1608Z1R5MH	1.5	0.35	120	60	
MCCI1608Z1R8MH	1.8	0.40	120	55	
MCCI1608Z2R2MH	2.2	0.50	120	50	
MCCI1608Z2R7MH	2.7	0.60	100	45	
MCCI1608Z3R3MH	3.3	0.65	100	40	
MCCI1608Z3R9MH	3.9	0.70	80	35	
MCCI1608Z4R7MH	4.7	0.75	80	33	
MCCI1608Z5R6MH	5.6	0.90	60	22	
MCCI1608Z6R8MH	6.8	0.90	60	20	
MCCI1608Z8R2MH	8.2	1.05	60	18	
MCCI1608Z100MH	10.0	1.15	60	17	
MCCI1608Z120MH	12.0	1.25	60	15	

Note:

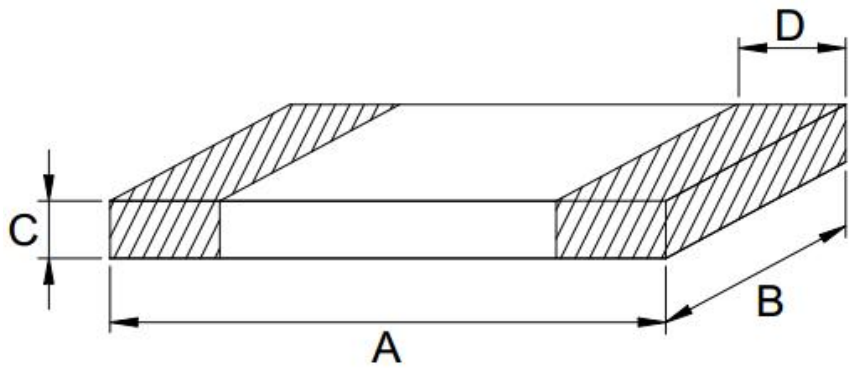
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

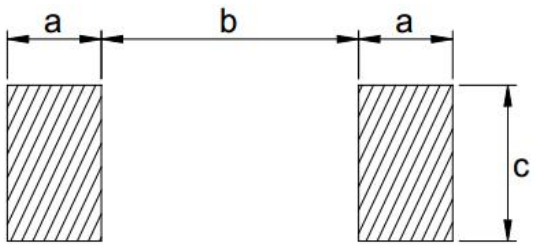
(Unit: mm)



Code	Dimensions
A	2.0 ±0.2
B	1.2 ±0.2
C	0.9 ±0.2
D	0.5 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.0 Ref
b	1.0 Ref
c	1.0 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF (MHz) min.	
MCCI2012Z47NMH	0.047	0.10	1100	280	
MCCI2012Z56NMH	0.056	0.10	1100	280	
MCCI2012Z68NMH	0.068	0.15	1100	250	
MCCI2012Z82NMH	0.082	0.15	1100	250	
MCCI2012ZR10MH	0.10	0.15	1100	210	
MCCI2012ZR12MH	0.12	0.15	1100	200	
MCCI2012ZR15MH	0.15	0.15	1100	175	
MCCI2012ZR18MH	0.18	0.15	1100	160	
MCCI2012ZR22MH	0.22	0.15	1100	150	
MCCI2012ZR27MH	0.27	0.15	1100	130	
MCCI2012ZR33MH	0.33	0.15	1100	120	
MCCI2012ZR39MH	0.39	0.15	1100	110	
MCCI2012ZR47MH	0.47	0.15	1100	100	
MCCI2012ZR56MH	0.56	0.36	800	100	
MCCI2012ZR68MH	0.68	0.36	800	95	
MCCI2012ZR82MH	0.82	0.36	800	90	

Note:

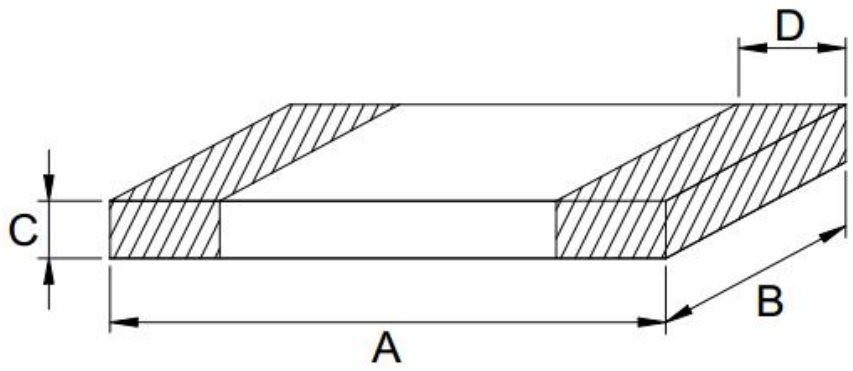
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

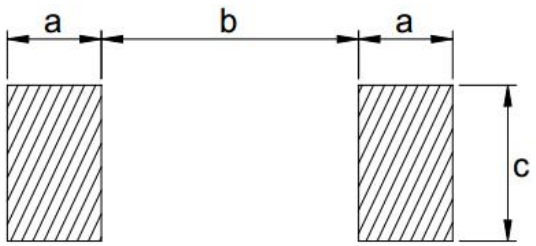
(Unit: mm)



Code	Dimensions
A	2.0 ±0.2
B	1.2 ±0.2
C	0.9 ±0.2
D	0.5 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.0 Ref
b	1.0 Ref
c	1.0 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF (MHz) min.	
MCCI2012Z1R0MH	1.0	0.24	800	75	
MCCI2012Z1R2MH	1.2	0.24	800	65	
MCCI2012Z1R5MH	1.5	0.30	700	60	
MCCI2012Z1R8MH	1.8	0.36	600	55	
MCCI2012Z2R2MH	2.2	0.36	600	50	
MCCI2012Z2R7MH	2.7	0.36	600	45	
MCCI2012Z3R3MH	3.3	0.40	350	41	
MCCI2012Z3R9MH	3.9	0.40	350	38	
MCCI2012Z4R7MH	4.7	0.40	350	35	
MCCI2012Z5R6MH	5.6	0.50	250	32	
MCCI2012Z6R8MH	6.8	0.50	250	29	
MCCI2012Z8R2MH	8.2	0.56	250	26	
MCCI2012Z100MH	10.0	0.56	250	24	
MCCI2012Z120MH	12.0	0.56	250	22	
MCCI2012Z150MH	15.0	0.56	100	19	

Note:

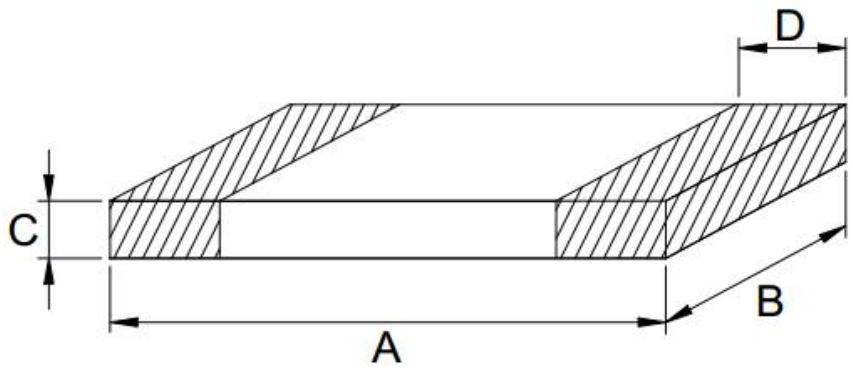
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

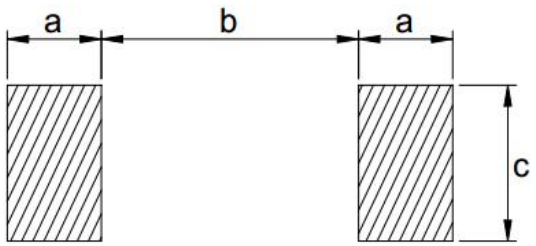
(Unit: mm)



Code	Dimensions
A	2.5 ±0.2
B	2.0 ±0.2
C	0.9 ±0.2
D	0.5 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.2 Ref
b	1.2 Ref
c	1.5 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF (MHz) min.	
MCCI252009Z1R0MH	1.0	0.12	1500	70	
MCCI252009Z1R2MH	1.2	0.15	1500	50	
MCCI252009Z1R5MH	1.5	0.15	1500	50	
MCCI252009Z1R8MH	1.8	0.18	1000	40	
MCCI252009Z2R2MH	2.2	0.18	1000	40	
MCCI252009Z2R7MH	2.7	0.22	1000	30	
MCCI252009Z3R3MH	3.3	0.22	1000	30	
MCCI252009Z3R9MH	3.9	0.26	1000	25	
MCCI252009Z4R7MH	4.7	0.26	1000	25	

Note:

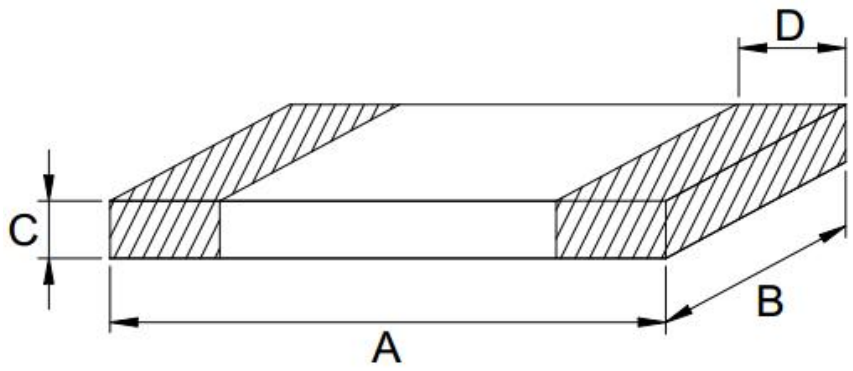
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

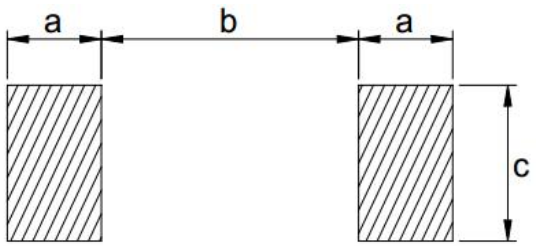
(Unit: mm)



Code	Dimensions
A	3.20 ±0.2
B	1.60 ±0.2
C	0.90 ±0.2
D	0.50 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.1 Ref
b	2.2 Ref
c	1.4 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF (MHz) min.	
MCCI3216Z47NMH	0.047	0.15	450	320	
MCCI3216Z56NMH	0.056	0.15	450	320	
MCCI3216Z68NMH	0.068	0.20	450	280	
MCCI3216Z82NMH	0.082	0.20	450	280	
MCCI3216ZR10MH	0.10	0.20	350	235	
MCCI3216ZR12MH	0.12	0.20	350	220	
MCCI3216ZR15MH	0.15	0.20	350	200	
MCCI3216ZR18MH	0.18	0.20	350	185	
MCCI3216ZR22MH	0.22	0.20	350	170	
MCCI3216ZR27MH	0.27	0.20	350	150	
MCCI3216ZR33MH	0.33	0.20	350	145	
MCCI3216ZR39MH	0.39	0.30	220	135	
MCCI3216ZR47MH	0.47	0.30	220	125	
MCCI3216ZR56MH	0.56	0.30	220	115	
MCCI3216ZR68MH	0.68	0.30	220	105	
MCCI3216ZR82MH	0.82	0.30	220	100	

Note:

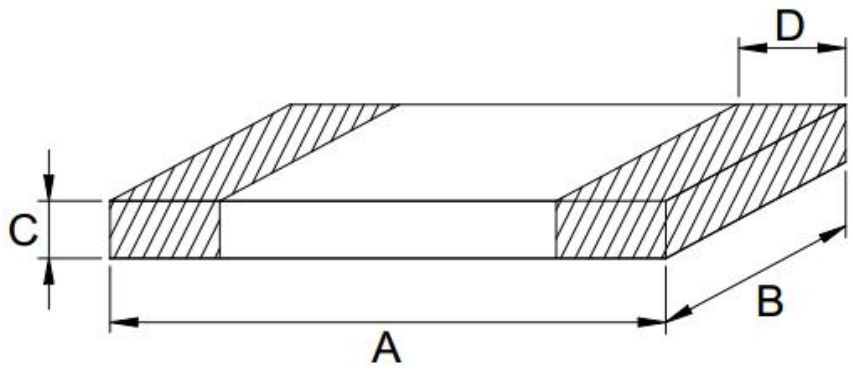
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

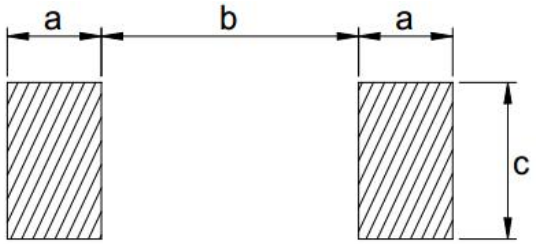
(Unit: mm)



Code	Dimensions
A	3.20 ±0.2
B	1.60 ±0.2
C	0.90 ±0.2
D	0.50 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.1 Ref
b	2.2 Ref
c	1.4 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF (MHz) min.	
MCCI3216Z1R0MH	1.0	0.20	250	75	
MCCI3216Z1R2MH	1.2	0.20	250	65	
MCCI3216Z1R5MH	1.5	0.25	250	60	
MCCI3216Z1R8MH	1.8	0.25	250	55	
MCCI3216Z2R2MH	2.2	0.30	200	50	
MCCI3216Z2R7MH	2.7	0.30	200	45	
MCCI3216Z3R3MH	3.3	0.30	200	41	
MCCI3216Z3R9MH	3.9	0.35	150	38	
MCCI3216Z4R7MH	4.7	0.35	150	35	
MCCI3216Z5R6MH	5.6	0.50	100	32	
MCCI3216Z6R8MH	6.8	0.50	100	29	
MCCI3216Z8R2MH	8.2	0.50	100	26	
MCCI3216Z100MH	10.0	0.50	100	24	
MCCI3216Z120MH	12.0	0.60	100	22	
MCCI3216Z150MH	15.0	0.80	50	19	
MCCI3216Z180MH	18.0	0.80	50	18	
MCCI3216Z220MH	22.0	1.0	50	16	
MCCI3216Z270MH	27.0	1.0	50	14	

Note:

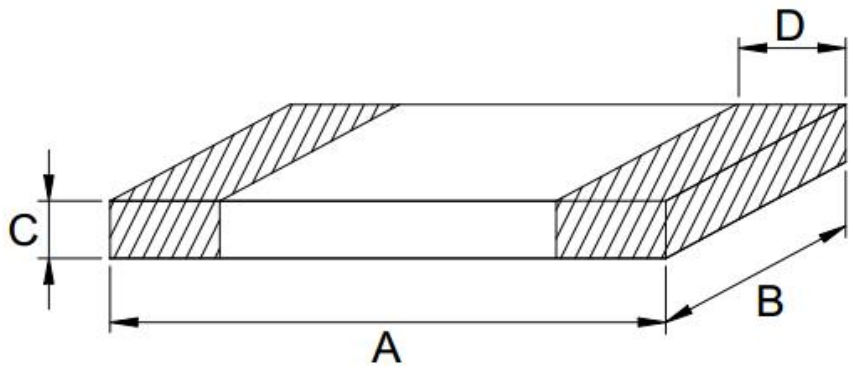
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

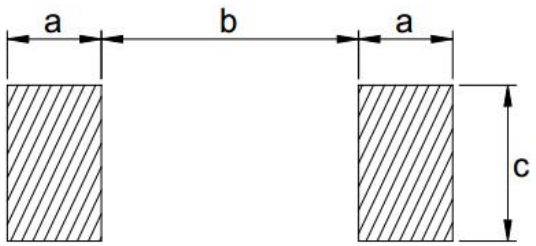
(Unit: mm)



Code	Dimensions
A	1.60 ±0.2
B	0.80 ±0.2
C	0.80 ±0.2
D	0.30 ±0.2

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.0 Ref
b	0.6 Ref
c	0.8 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω)	Rated Current (mA)Max	SRF (MHz) min.	
MCCI1608ZR56MHH	0.56	0.12±30%	1050	100	
MCCI1608Z1R0MHH	1.0	0.20±30%	900	98	
MCCI1608Z1R8MHH	1.8	0.24±30%	750	95	
MCCI1608Z2R2MHH	2.2	0.24±30%	750	95	
MCCI160814R7MHH	4.7	0.50±30%	700	65	

Note:

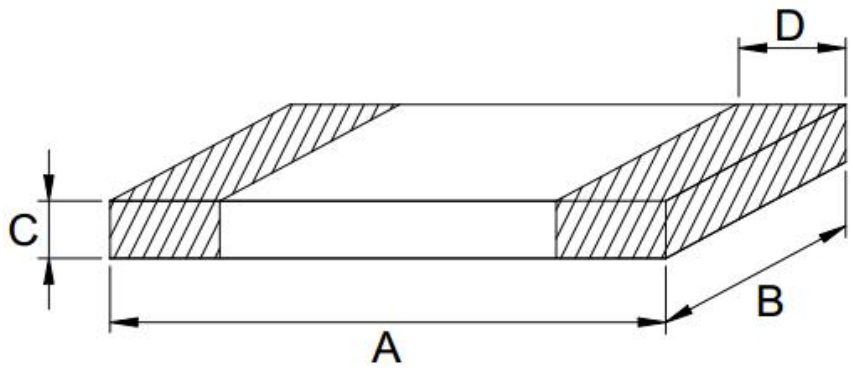
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

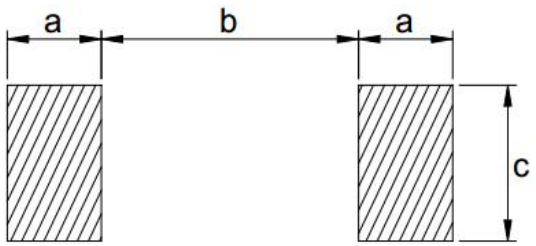
(Unit: mm)



Code	Dimensions
A	2.0 ±0.2
B	1.2 ±0.2
C	0.9 ±0.2
D	0.5 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.0 Ref
b	1.0 Ref
c	1.0 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω)	Rated Current (mA)Max	SRF (MHz) min.	
MCCI2012Z1R0MHH	1.0	0.11±25%	1150	75	
MCCI2012Z2R2MHH	2.2	0.20±25%	950	50	
MCCI2012Z3R3MHH	3.3	0.22±25%	800	35	
MCCI2012Z4R7MHH	4.7	0.30±25%	750	25	
MCCI2012Z6R8MHH	6.8	0.30±25%	600	25	

Note:

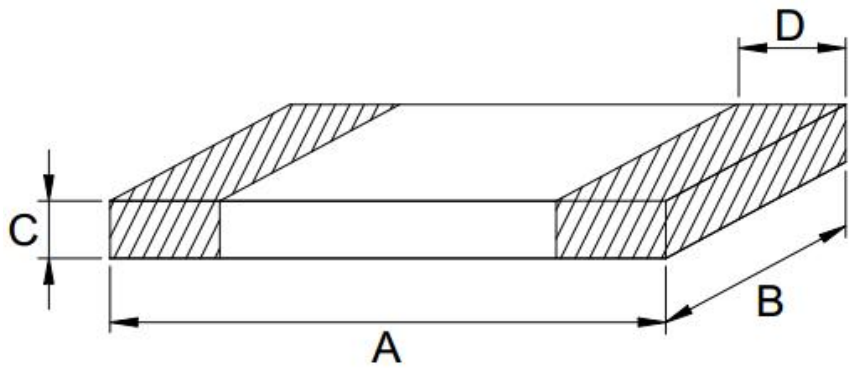
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

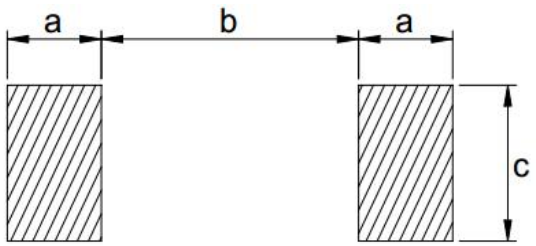
(Unit: mm)



Code	Dimensions
A	2.0 ±0.2
B	1.6 ±0.2
C	0.9 ±0.2
D	0.5 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.0 Ref
b	1.0 Ref
c	1.6 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω)	Rated Current (mA)Max	SRF (MHz) min.	
MCCI201609Z1R0MHH	1.0	0.10±25%	1400	70	
MCCI201609Z2R2MHH	2.2	0.16±25%	1200	50	
MCCI201609Z3R3MHH	3.3	0.20±25%	1200	40	
MCCI201609Z4R7MHH	4.7	0.26±25%	1100	30	

Note:

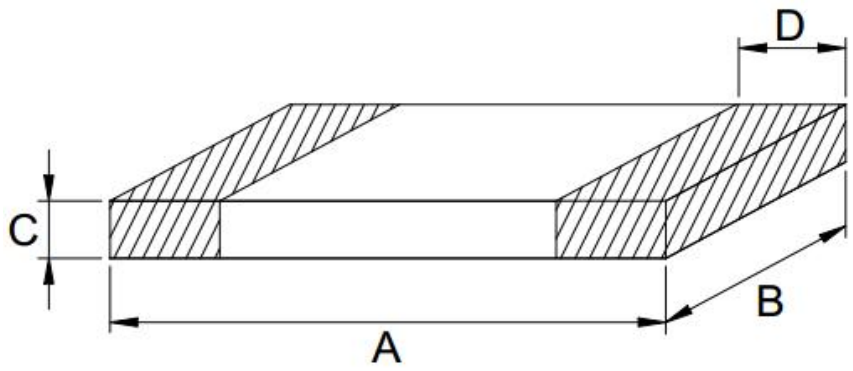
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

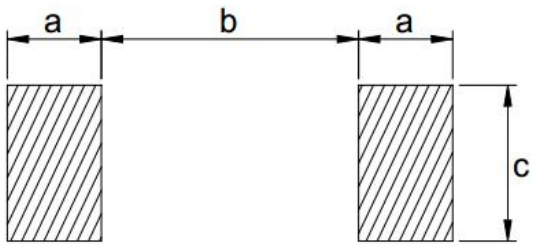
(Unit: mm)



Code	Dimensions
A	2.5 ±0.2
B	2.0 ±0.2
C	1.0 ±0.2
D	0.5 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.2 Ref
b	1.5 Ref
c	1.5 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω)	Rated Current (mA)Max	SRF (MHz) min.	
MCCI252010Z1R0MHH	1.0	0.06±25%	1600	70	
MCCI252010Z2R2MHH	2.2	0.10±25%	1300	55	
MCCI252010Z3R3MHH	3.3	0.14±25%	1200	30	
MCCI252010Z4R7MHH	4.7	0.18±25%	1100	25	

Note:

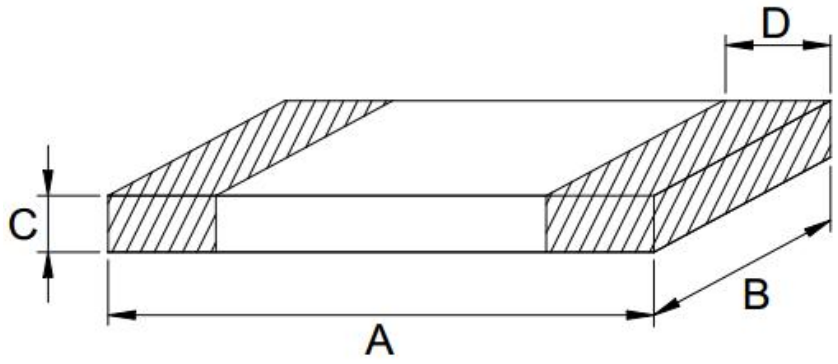
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Mechanical & Dimensions

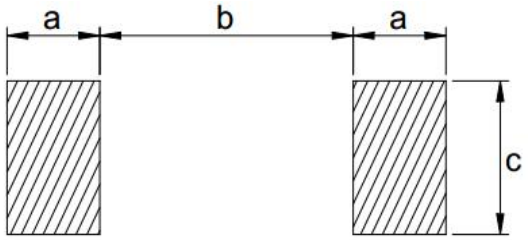
(Unit: mm)



Code	Dimensions
A	3.20 ±0.2
B	1.60 ±0.2
C	0.90 ±0.2
D	0.50 ±0.3

Recommend Land Pattern Dimensions

(Unit: mm)



Code	Dimensions
a	1.1 Ref
b	2.2 Ref
c	1.4 Ref

Electrical Characteristics

Part Number[3]	Inductance[1] (μH)	DCR[2] (Ω) Max	Rated Current (mA)Max	SRF (MHz) min.	
MCCI3216Z1R0MHH	1.0	0.15	1200	60	
MCCI3216Z1R2MHH	1.2	0.15	1200	65	
MCCI3216Z1R5MHH	1.5	0.17	1000	60	
MCCI3216Z1R8MHH	1.8	0.24	900	55	
MCCI3216Z2R2MHH	2.2	0.24	900	50	
MCCI3216Z2R7MHH	2.7	0.30	800	45	
MCCI3216Z3R3MHH	3.3	0.30	800	41	
MCCI3216Z3R9MHH	3.9	0.38	700	38	
MCCI3216Z4R7MHH	4.7	0.38	700	35	
MCCI3216Z5R6MHH	5.6	0.45	500	32	
MCCI3216Z6R8MHH	6.8	0.45	500	29	
MCCI3216Z8R2MHH	8.2	0.55	300	26	
MCCI3216Z100MHH	10.0	0.55	300	24	
MCCI3216Z120MHH	12.0	0.55	300	22	
MCCI3216Z150MHH	15.0	0.65	100	19	
MCCI3216Z180MHH	18.0	0.65	100	18	

Note:

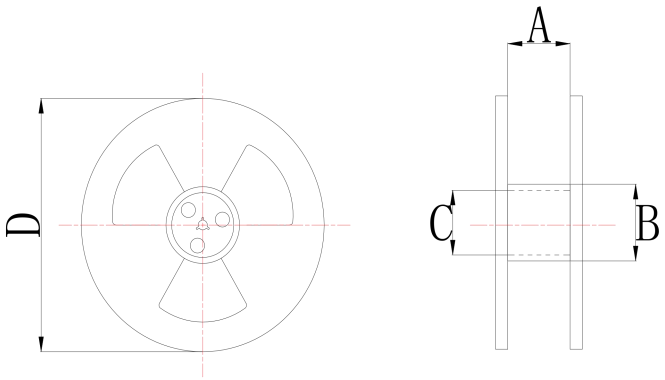
1.Inductance is measured at 1MHz and 50 mV.

2.The nominal DCR is measured at 20℃ ambient temperature.

3.Inductance Tolerance.(J: ±5% ,K:±10% ,M:±20%)

Packaging

Reel Dimension:

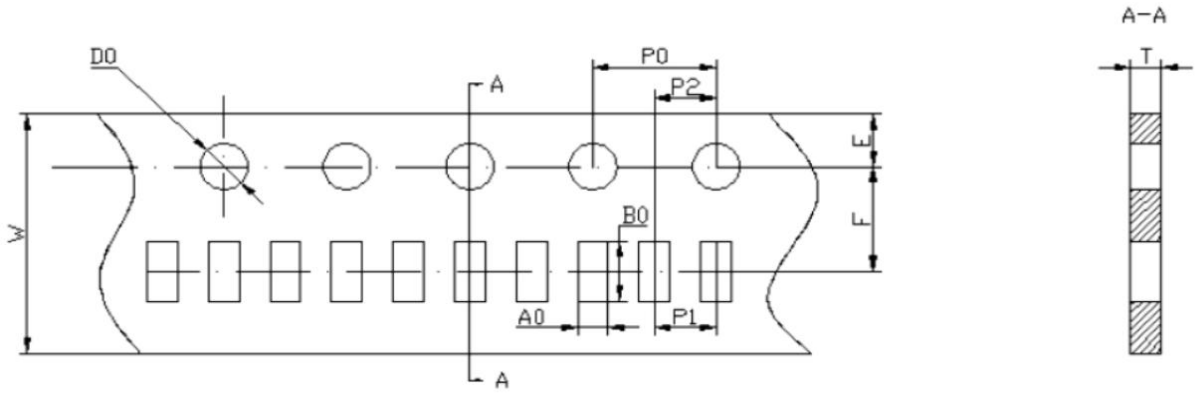


P/N	Type	A(mm)	B(mm)	C(mm)	D(mm)	Chip/Reel
MCCI1005	7" x 8mm	9.0 ± 0.5	60.0 ± 2.0	13.5 ± 1.5	178 ± 2.0	10,000
MCCI1608	7" x 8mm	9.0 ± 0.5	60.0 ± 2.0	13.5 ± 1.5	178 ± 2.0	4,000
MCCI2012	7" x 8mm	9.0 ± 0.5	60.0 ± 2.0	13.5 ± 1.5	178 ± 2.0	4,000
MCCI3216	7" x 8mm	9.0 ± 0.5	60.0 ± 2.0	13.5 ± 1.5	178 ± 2.0	4,000
MCCI3225	7" x 8mm	9.0 ± 0.5	60.0 ± 2.0	13.5 ± 1.5	178 ± 2.0	3,000
MCCI4532	7" x 12mm	13.5 ± 0.5	60.0 ± 2.0	13.5 ± 1.5	178 ± 2.0	3,000
MCCI201609	7" x 8mm	9.0 ± 0.5	60.0 ± 2.0	13.5 ± 1.5	178 ± 2.0	4,000
MCCI252009	7" x 8mm	9.0 ± 0.5	60.0 ± 2.0	13.5 ± 1.5	178 ± 2.0	3,000
MCCI252010	7" x 8mm	9.0 ± 0.5	60.0 ± 2.0	13.5 ± 1.5	178 ± 2.0	3,000
MCCI321611	7" x 8mm	9.0 ± 0.5	60.0 ± 2.0	13.5 ± 1.5	178 ± 2.0	3,000

Packaging

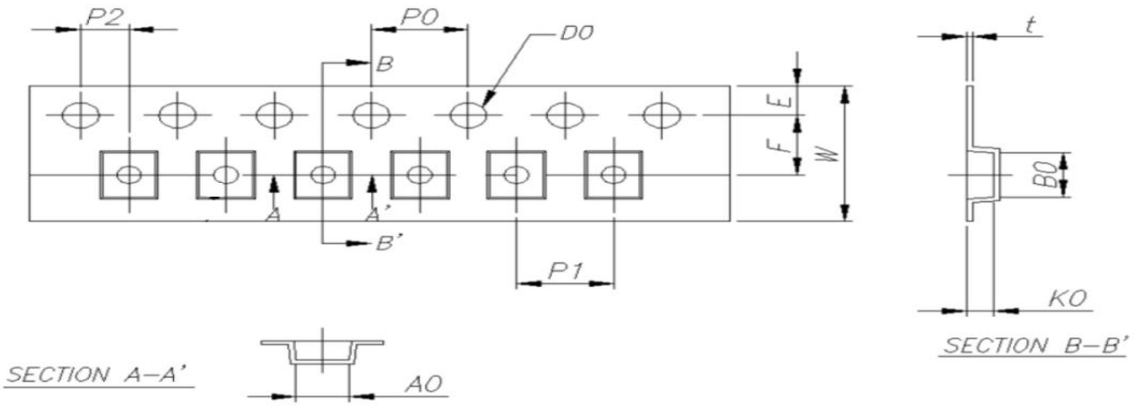
Tape Dimension:

Material of taping is paper



P/N	Ao	Bo	T	E	F	D0	P1	P2	W	P0
MCCI1005	0.65±0.1	1.15±0.1	0.60±0.1	1.75±0.1	3.5±0.1	1.55±0.1	2.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCI1608	1.10±0.1	1.90±0.1	0.95±0.1	1.75±0.1	3.5±0.1	1.55±0.1	4.0±0.2	2.0±0.1	8.0±0.3	4.0±0.1
MCCI2012	1.50±0.1	2.30±0.1	0.95±0.1	1.75±0.1	3.5±0.1	1.55±0.1	4.0±0.2	2.0±0.1	8.0±0.3	4.0±0.1
MCCI3216	1.90±0.1	3.50±0.1	0.95±0.1	1.75±0.1	3.5±0.1	1.55±0.1	4.0±0.2	2.0±0.1	8.0±0.3	4.0±0.1

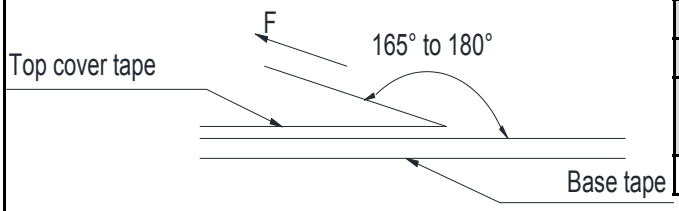
Material of taping is plastic



P/N	Ao	Bo	K0	E	F	D0	P1	P2	W	P0
MCCI3225	2.77±0.1	3.42±0.1	1.55±0.1	1.75±0.1	3.5±0.1	1.55±0.1	4.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCI4532	3.66±0.1	4.95±0.1	3.66±0.1	1.75±0.1	5.5±0.1	1.55±0.1	8.0±0.1	2.0±0.1	12.0±0.3	4.0±0.1
MCCI201609	1.90±0.1	2.30±0.1	1.15±0.1	1.75±0.1	3.5±0.1	1.55±0.1	4.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCI252009	2.20±0.1	2.75±0.1	1.05±0.1	1.75±0.1	3.5±0.1	1.55±0.1	4.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCI252010	2.20±0.1	2.75±0.1	1.05±0.1	1.75±0.1	3.5±0.1	1.55±0.1	4.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1
MCCI321611	1.88±0.1	3.50±0.1	1.27±0.1	1.75±0.1	3.5±0.1	1.55±0.1	4.0±0.1	2.0±0.1	8.0±0.3	4.0±0.1

Packaging

Tearing Off Force:



The force tearing off cobe tape is 10 to 130 g.f in the arrow direction under the following conditions			
Room Temp (℃)	Room Humidity (%)	Room atrn (hPa)	Teaming Speed (mm/min)
5~35	45~85	860~1060	300

※Storage Conditions

1. Temperature and humidity conditions: -40℃ ~ +85℃ and 70% RH.
2. Recommended products should be used within 6 months form the time of delivery.
3. The packaging material should be kept where no chlorine or sulfur exists in the air.

※Transportation

1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

Recommended Soldering Conditions

Figure 1. Re-flow Soldering

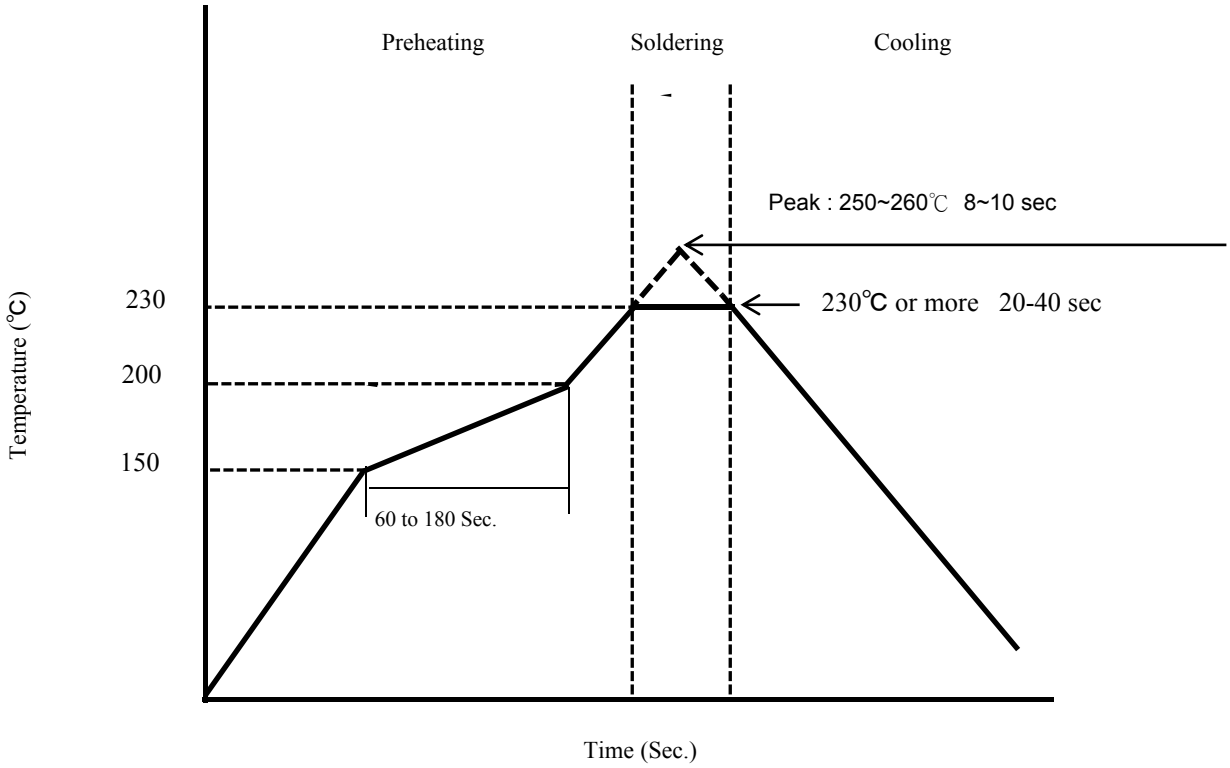
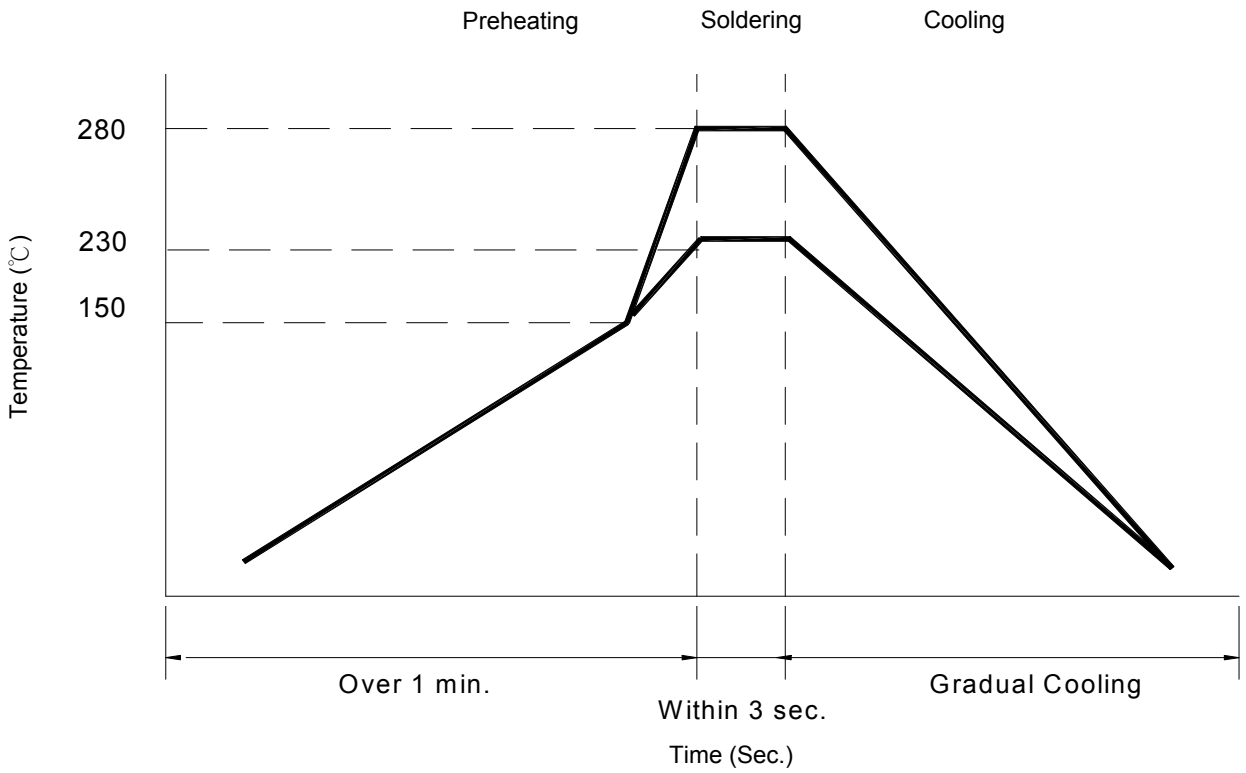
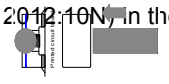


Figure 2. Hand Soldering



Reliability and Testing Conditions

Item	Specification	Conditions
Operating temperature range	-40℃ ~+85℃(Including self-temperature rise)	
Storage temperature and humidity range	-40℃ ~+85℃ , 70% RH Max	
Solderability	More than 95% of the terminal electrode should be covered with solder.	- Preheat: 150 ℃, 60 sec - Solder: Sn96.5%-Ag3%-Cu0.5% - Temperature: 245±5℃ - Flux for lead free: Rosin 9.5% - Dip time: 4±1 sec - Depth: completely cover the termination
Resistance to Soldering Heat	Electrical Characteristics (Impedance or Inductance) within ±30% of initial value. No disconnection or short circuit. The appearance shall not break.	- Solder technique simulation: SMD - Temperature (°C): 260 ± 5 (solder temp) - Time (s): 10 ± 1 - Temperature ramp / immersion and emersion rate: 25 mm/s ± 6 mm/s - Number of heat cycles: 1
Resistance to High Temperature	Electrical Characteristics (Impedance or Inductance) within ±30% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in 85±2℃ and 2 hour drying under normal condition.
Resistance to Low Temperature	Electrical Characteristics (Impedance or Inductance) within ±30% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in -40±2℃ and 2 hour drying under normal condition.
Resistance to Humidity	Electrical Characteristics (Impedance or Inductance) within ±30% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in 60±2℃ and 90% to 95% RH, and 2 hour drying under normal condition.
Thermal shock	Electrical Characteristics (Impedance or Inductance) within ±30% of initial value. No disconnection or short circuit. The appearance shall not break.	After 30 cycles of following condition. Step / Temperature (℃) / Times (min.) 1 / -40±2℃ / 30 2 / Room Temperature / Within 3 3 / 85±5℃ / 30 4 / Room Temperature / Within 3
Vibration Test	Electrical Characteristics (Impedance or Inductance) within ±30% of initial value and no mechanical damaged.	After vibration for 1hour, In each of three orientations at sweep vibration (10~55~10Hz) with 1.52mm P-P Amplitudes.
Terminal strength	The terminal electrode and the ferrite must be no damage	Solder a chip to test substrate, and then laterally apply a force(＜1005:2N ,≦2012:5N ,＞2012:10N in the arrow direction, Duration :5.0s 
Drop Test	Electrical Characteristics (Impedance or Inductance) within ±30% of initial value and appearance shall not break.	Drop 3 times on a concrete floor from a height of 75cm by inimum packing